ERP: Getting Started

Michael Crow
Environmental Policy Consultant

State Innovation Grants Workshop -- Washington, DC
May 16-17, 2007

Overview

- Needs to Succeed
- People Who Can Help
- Resources That Can Help
- Quick Topic Briefings for Grant Prep
  - ERP Road Map
  - ERP Planning with Project-Management Software
  - Statistics
- Questions

Needs to Succeed

- Be a good generalist. ERP involves:
    - Policy development and planning
    - Statistics
    - Politics
    - Information technology/data management
    - Law
    - Technical writing
    - Marketing & outreach
- Stay focused on the big picture, but
    - Be flexible and adaptable
    - Be able and willing to make trade-offs
- Acquire knowledge – *at the right time*

People Who Can Help with ERP

- Your Peers
  - States already doing ERP
  - States just starting
  - Consortium has both
- EPA (Region and Headquarters)
- EPA contractor support

My Approach to Assistance

- Ask you questions to better understand:
    - Context of ERP in your case
    - What you want
    - Your constraints and capabilities
- Build your capacity to:
    - Understand complex ERP issues
    - Anticipate and head off potential problems
    - Make well-informed policy decisions

Typical Assistance

- **Initially:** Assist in developing work plan, strategy and schedule

- **Down the road**: Assist with measures, statistical approach, QAPP, stakeholder outreach and other aspects of ERP

Resources That Can Help

- EPA ERP Documents and Tools
  - Users Guide, Statistical Guide, Data Management Guide, UST workbook, and Statistical Tools
  - **New:** Executive Summary of 2007 ERP Results Report and companion PowerPoint presentation
  - **New:** Detailed training in statistics and/or QA
- State ERP Documents and Tools
  - Inspector checklist, EBPIs, Workbooks, Certification forms, etc.
  - MA automation tool set
- Web Sites
  - Consortium web site expected this summer
  - Individual state web sites available
- WHERE DO YOU START?

Quick Topic Briefings for Grant Prep

- ERP Road Map
  - Helps give you the right info at the right time
- ERP Planning Using Project-Management Software
  - Help develop realistic milestones
- Important Notes about ERP Measures
- Key Ideas about Statistics and ERP
  - Help you set realistic measurement expectations

ERP Road Map

ERP Road Map

- Bird's eye view of <u>typical</u> ERP

- Helps you plan your ERP

- Helps you know what to read and when

- ERP is broken into six phases

  - In each phase…

    - Typical tasks, with advice and background documents

    - Common stakeholders

- Resource Library with many materials

More Info on Road Map

- Last updated November 2005
- Materials update expected this summer
- Current URL:

  http://www.epa.gov/erp/roadmap/index.htm

- May transition to Consortium web site

ERP Planning

ERP Planning Using Project-Management Software

- ERP is elegant in theory, but complex and detailed in implementation

- Project-management software can help:
  - Identify all the tasks
  - Calculate the schedule based on task relationships (e.g., dependencies)
  - Identify conflicts and resolve them
  - Track and manage resources
  - View the schedule in a variety of formats (e.g., Gantt chart, simple list)
  - Easily update the schedule as things change

ERP Planning Using Project-Management Software (cont.)

- Many states are using Microsoft Project

- Many states have produced detailed Gantt charts (see the Road Map for examples)

Partial view of FL Gantt Chart

Florida DEP Auto Repair CAPP
Pre-Certification Gantt Chart (Revised Thu 2/20/03)

ID	Task Name	Duration	Start	Finish	Predecessors	January	Februa	March	April	May	June
1	Define Facility Universe Characteristics	4.2 wks	Tue 1/1/02	Tue 1/29/02							
2	Develop and finalize database containing targeted facilities	5 wks	Wed 1/30/02	Tue 3/5/02	1						
3	Develop ERP Brochure	3 wks	Mon 2/4/02	Fri 2/22/02							
4	Finalize inspector checklist & EBPIs	2 wks	Mon 2/4/02	Fri 2/15/02							
5	Database for data collected during inspections	3.5 wks	Mon 2/11/02	Wed 3/6/02							
6	Gather materials for self-certification/compliance assistance workbook	6 wks	Wed 2/13/02	Tue 3/26/02							
7	Draft facility forms (i.e., self-certification, RTC plan, non-applicability forms)	3 wks	Mon 2/18/02	Fri 3/8/02	4						
8	Review statistical methodology (primarily regarding sampling issues)	1 wk	Wed 2/27/02	Tue 3/5/02	2FF						
9	Procedure for handling inspection data collection/entry (QA/QC)	1 wk	Wed 2/27/02	Wed 3/6/02	5FF						
10	Generate random sample	3 days	Wed 3/6/02	Fri 3/8/02	8						
11	External review of facility forms prior to informal stakeholders mtg.	11 days	Mon 3/11/02	Mon 3/25/02	7						
12	Prepare inspector training	3 days	Mon 3/11/02	Wed 3/13/02	10FF,7,9						
13	Dry run of inspector training	1 day?	Wed 3/13/02	Wed 3/13/02	12FF						
14	Inspector training	1 day?	Thu 3/14/02	Thu 3/14/02	13						
15	Debrief meeting	1 day?	Fri 3/15/02	Fri 3/15/02	14						
16	Inspections, Round 1 (Includes most data entry) (45 calendar days)	6.5 wks	Mon 3/18/02	Wed 5/1/02	15						
17	Prepare outline and two draft sections of workbook	1.6 mons	Fri 3/15/02	Mon 4/29/02	11SS+4 days						
18	Initial analysis of baseline inspection EBPI data (major trends)	8 wks	Mon 4/22/02	Fri 6/14/02	16SS+5 wks						
19	Informal stakeholders conf. call to review facility forms, workbook	1 day	Tue 4/30/02	Tue 4/30/02	11,17						
20	Write remainder of self-certification/compliance assistance workbook	6.5 wks	Wed 5/1/02	Fri 6/14/02	6,19						

www.CrowEnvironmental.com

ERP Measures

Considerations for ERP Measures

- Meets your goals
- Consistency with other states' and EPA's reporting on ERP
  - Allows comparability, aggregation
  - See EBPIs for other states, data presented in 2007 ERP Results Report, and indicators for the Common Measures Project
- Consider parallel reporting consistent with traditional measures (e.g. compliance rates)

Sample ERP Measures

- Sector/media-specific Environmental Business Practice Indicators (EBPIs)
- Submission rate of return to compliance plans
  - % submitting (of all facilities; of volunteers)
  - Total number of plans submitted
- Average performance change on EBPIs
- Counts of EBPIs improving, worsening, and not changing (high-level)
  - Count of statistically significant changes in those categories
- Change in public perception
- Cost-effectiveness (FTEs per facility, e.g.)

ERP Statistics

A Few Things about ERP Statistics

- The role of statistics in ERP
- Limitations of statistics
- Benefits of using statistics

Role of Statistics

- **Fundamental role**: draw inferences based on sample of the population
- **Statistical analysis can help**:
  - Assess baseline performance
  - Understand certification data
  - Assess changes in performance

Limitations of Statistics

- It's only an estimate, less accurate than a census of facilities.

- Care must be taken to avoid mistakes
  - Garbage in, garbage out
  - Conclusions depend on design and implementation of statistical methodology
  - Good idea to discuss your plan with a qualified statistician (especially for uncommon approaches)

Benefits of Using Statistics

- Get the most of your data

- Know what you don't know (i.e., know the level of uncertainty)

- Differentiate performance among types of facilities

- Demonstrate results clearly and decisively

- Mine the data for patterns (more advanced)

ERP Statistics FAQs

- Q: How many inspections do I have to conduct?
- A: It depends. ☺
  - Example:
    - Expected change > 10%
    - Inspect ~134 facilities *in each round*
    - If change observed > 10%, you can be "pretty sure" there was a change in the whole population. Otherwise, no.
      - "Pretty sure" = 19 out of 20 times (or 95%)
  - Example 2 (fairly sure)
    - Inspect ~82 facilities in each round
    - For change > 10%, you're "fairly sure"
    - "Fairly sure" = 9 out of 10 times (or 90%)

Contact Information

Michael Crow

Environmental Policy Consultant

Takoma Park, Maryland

Phone: 240-398-3643
Cell: 301-580-3501
Fax: 240-804-8080
E-mail: Mike@CrowEnvironmental.com
Web: www.CrowEnvironmental.com